



Mostafa Ahmed AbdAlMonam Farrag

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🔄 <https://github.com/MAfarrag>

Sex: Male | Date of birth: 11 / 2 / 1992 | Nationality: Egyptian

RESEARCH WORK EDUCATION AND TRAINING

Oct 2018 Early Stage Researcher

GFZ German Research Centre for Geoscience, Section Hydrology, Potsdam

<http://www.gfz-potsdam.de>

- Developing a continuous Hydrodynamic routing 1D(diffusive wave)-2D (Inertia model formulation) connected with Distributed Hydrological Model for Large scale flood risk assessment chain of models
- Developing a river cross section simplification method and integrate it with the hydrodynamic 1D-2D routing approach
- Developing a probabilistic dike failure model to simulate breach development, location, and outflow discharge and integrate it in the whole chain of models
- Flood risk assessment of the Rhine basin using the developed modelling approach and applying different mitigation measure

April 2018 to July Hydroinformatics researcher

UNESCO-IHE, Water science & Engineering Program, Delft, Netherlands <https://goo.gl/CnrPBd>

Hydroinformatics, Modelling and Information Systems for Water Management program

- Developing Hydroinformatics tools, to solve problems related hydrology, hydraulics and IWRM based on web and mobile application using programming languages like HTML, Php, JavaScript's ([work sample](#))
- Building database for big meteorological and hydrological data using SQLite,
- Integrating GIS tools (ARC GIS, QGIS) with Python programming language to explore and visualize spatial distributed data.

Oct 2016 to April 2018

MSc in Hydroinformatics

GPA: 8.1 / 10

UNESCO-IHE, Water science & Engineering Program, Delft, Netherlands <https://goo.gl/CnrPBd>

Hydroinformatics, Modelling and Information Systems for Water Management program

- Thesis Topic
 - **Spatio-Temporal simulation of a catchment response based on dynamic weighting of hydrological models. ([Thesis/dissertation](#))**
 - The main objective was to evaluate the benefit of spatial distribution of the model input (precipitation), structural components (soil moisture and stream flow routing computations), and surface characteristics (parameters) using a conceptual distributed hydrological model. ([model-script in GitHub](#))
- Courses: <https://goo.gl/CnrPBd>
 - Courses of Numerical methods & computational hydraulics to develop codes (MATLAB, R, Python) for solving water numerical related problems, and analysis of commercial Hydrodynamic models and physical based model's software (SOBEK, MIKE, HEC, ...)
 - Computational intelligence, Optimization, Modelling theory & using statistical models (artificial Neural network ANN and other data driven models) in hydrological problems.

- Flood risk management; urban & riverine flood modelling, flood inundation maps, flood forecasting & early warning systems
 - ICT & Hydroinformatics for decision support, serious gaming, developing web platform & mobile application.
- May 2017 June 2017 **Training at United States Geological survey of engineers (USGS)**
- United states Geological survey of engineers (USGS), Florida Atlantic University, US Corps Army of Engineers on Flood risk management.
- Joint training In Florida USA between USGS and Florida Atlantic University on **Everglades restoration project** and the Hydroinformatics tools used in the project
- Predictions & projections of future precipitation, Linking Hydrologic scenarios with ecological models & Real time spatial hydrological & ecological forecasting
- Feb 2015 to Oct 2016 **Post Graduate Studies in Water resources**
- Cairo university, Faculty of Engineering, Irrigation & Hydraulics Department GPA: 3.5 (B+)
- Thesis Topic
 - Using the remote sensing technique in evaluation of the evaporation loss from Lake Nasser depending on the satellite data and multiple climate reanalysis evaporation estimates and examine temporal & spatial variability of evaporation
 - Research Projects
 - WATER HAMMER ANALYSIS**
Performing modelling using BENTLEY water Hammer to show the effect of the Pipe material, pipe length, valve type, pattern of valve closure and Damping ratio on the behaviour of the hammer wave, and on pressure extreme values.
 - Ground water 2D aquifer**
Develop, debug and test a program in FORTRAN language to model the head distribution in 2D aquifer.
 - **GVF LAB EXPERIMENT (https://youtu.be/OH-Sg_1j4ls)**
Performing a various lab experiments to explain the concept of the gradually varied flow, the final output was a video and it has been published on the lab channel on YouTube
- Sep 2009 to May 2014 **Bachelor's degree in Civil Engineering**
Major: Water & Environmental Engineering
- Cairo university, Faculty of Engineering, Irrigation & Hydraulics Department very good with honour (81.4%)
Graduation project grade: Distinction
- Graduation Project:
" **Leakage of Drinking water in Matruh & Siwa Environmental Problems** "
- Design of water supply alternatives for the city of Matrouh first using 300 km water pipe line from the nearest ground water wells field and the required Pump Station boosters, performing the water hammer analysis for protecting the pipelines against damage of power failure using (Civil3d, Water Gems, Google Earth, Global Mapper, WMS & Bentley Water Hammer), second alternative with reverse osmosis RO desalination plant.
- May 2016 (1 Month) **Info Package Training**
- Khatib & Alami Cairo office
- analysis of water, sewage & Storm network using Info package software (software products of Innovyze)

WORK EXPERIENCE

Aug 2014: Sep 2016 **Water Environmental Engineer**

Khatib & Alami (<http://www.khatibalami.com>)

Business or sector: Multidisciplinary Architectural and Engineering Consulting Company

Main Duties & responsibilities:

- Support Project Managers with the management of client relations and expectations.
- Support Project Managers with the responding to client clarifications in technical issues.
- Collect internally available data to support project execution
- Support the development of concept designs for waste water, including all required drawings and reports for discussion with clients
- Support the refinement of selected design options into schematic and draft final designs, including all required drawings and reports, as instructed
- Support the senior project team with the review and validation of design deliverables with clients and authorities, capturing feedback and obtaining approvals.

Projects:**- Qatar 2022.**

Duties:

- Preparing a Combined Infoworks model for the projects in the area (Al Egda, Al Heedan, Alkhor & Al Bayt Stadium with area of 287 Hectare) According to the British Standards
- Performing the hydraulic analysis and the Preparing Detailed Design of the **wet utilities infrastructure (sewage Network, Irrigation Network)** of 900 Hectare project area According to the British Standards & Preparing several Impact assessments on the design Due to Changes

○ **Asir & Al-Bahah Housing project, KSA**

Duties:

- Preparing the Detailed design of 500 Hectare Project area of main and tertiary **Irrigation Network, Sewage Network** and Performing the Hammer Analysis on the Project and Sizing of the Protection

PERSONAL SKILLS

Mother tongue(s) ARABIC

Other language(s) ENGLISH

Computer Skills:

-Python	-DHI Software (Mike)	-WMS	-HEC-RAS
-MATLAB	-Info Works	-Sewer Gems	-Global Mapper
-Fortran	-Sobek	-Civil3D	-MS Office
-HTML/CSS/JavaScript	-Modflow	-Water Gems	
-ARC GIS	-GMS		
	-Water Hammer		